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## Newcomers look to carve niche in equipment market

July 9, 2003

By Chuck Stogel

GolfWeb Equipment Correspondent

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Trinity, Blade and Photon are three relatively new names in golf equipment.

Each is seeking to establish a niche foothold in a vastly competitive marketplace by promoting unique playing characteristics and technological merits.

For Photon Golf, which is based in Westminster, Colo., "laser" is the key word. The company cites the benefits of its laser surface modification for its drivers and laser nanogroove technology for its putters.

For Blade Golf, based in Montgomery, Ala., it began four years ago by building a faithful following for its forged irons. This month, the company began shipping its X380 titanium drivers in a bid to expand its scope.

For Trinity Golf, headquartered in Tustin, Calif., a curiously familiar look to its wedges blends with quality manufacturing and on-course performance.

Here's a closer look at all three.

### Feature content

### PHOTON

#### Information:

- [Get more info on Trinity, Blade and Photon](#)

Photon.

A group of demo testers assembled by GolfWeb praised both the Titanium Pro Driver and the YAG-1 putter from

In making its driver, which comes with a 360cc head in lofts of 9.0 and 10.5 degrees, Photon employs a laser surface modification process which, according to the company, helps eliminate surface defects and creates a consistent response across the face.

Testers praised the Photon driver for its solid looks, solid feel at impact and for overall results in trajectory and distance achieved.

Due to ship next month, the Photon driver comes with a multitude of shaft options. Suggested retail prices, depending on shaft, range from \$249 to \$379.

Our test group was even more praiseworthy in reviewing the Photon YAG-1 putter, which looks a lot like the Ping Anser or Scotty Cameron Newport by Titleist (which itself is a derivative of the Ping Anser).

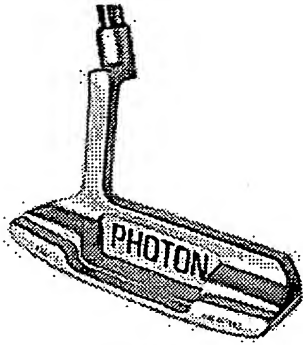
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**The YAG putter features laser nanogroove technology.**

"It just feels great, and works very well," said one tester.

Based on heel-toe weighted designs with heel-shafted blades, the YAG putter faces are manufactured via laser nanogroove technology, which is designed to produce a crisp, non-skid roll.

The YAG putter series will expand in August to offer a semi-mallet and a heel-toe weighted mid-slant.

All the Photon putters bear a suggested retail price of \$89.

## TRINITY

Stand back about 10 to 15 feet from any Trinity wedge, without knowing the manufacturer, and try to guess who makes these clubs. In an actual test among a demo group of golfers, the responses were virtually unanimous: Ping.

Designed by Les Miller, whose background includes creditable stints at Cleveland and Never Compromise, the new TG 02 Spin Action wedges are unabashedly modeled after the Ping Eye2 series. Most importantly, though, they not only look the part, they performed very well in group testing.

Trinity makes its wedges with a choice of two materials: carbon steel with an elegant "cobalt" finish that will wear over time to enhance feel and spin control; beryllium copper, which has a unique feel itself and is designed for consistent play.

Both models come in a series of three wedges: gap, 52 degrees; sand, 56 degrees; and lob, 60 degrees.

The two materials have distinct trajectories and distances, so choosing between them becomes a matter of testing and personal preference.

"It's in the grind that you'll find the key to the TG 02 wedges; the sole's width, camber, bounce and, most importantly, the way these features are blended together," said Miller.

Featuring large heads, square grooves and steel shafts, list price is \$89 per wedge in carbon steel and \$99 in beryllium copper.

## BLADE

Still a young company, Blade has gained some renown for its Tour Feel putter line as well as its TF-1 and TC-2 irons.

This month, Blade added an X380 titanium driver to its lineup.

"Just like our forged irons, the X380 has to exceed, not just meet, the competition," said Richard Madison, Blade Golf president/CEO.

Made from a titanium alloy, the X380 boasts a center of gravity that will promote greater distance for the average golfer while allowing more skilled players the ability to "work" the ball. The club also features a

Variable Hosel Tuning technology whereby a three-inch hosel bore allows for custom tuning the shaft to individual playing characteristics.

Available in lofts of 8.5, 9.5, 10.5 and 11.5 degrees, the suggest retail prices for the X380 range \$299 to \$399 depending on the shaft selected.

**Editor's note:** *Chuck Stogel writes about equipment. Look for his columns each week on GolfWeb and PGATOUR.COM.*

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## Photon Golf - See the Light

From Brent Kelley, Your Guide to Golf.  
Jul 9 2004

### Innovative Approach Produces Better Feeling Driver, Putters

Photon Golf is a young company using an innovative laser technology to produce better-feeling drivers and putters.

Darin Aldrich - make that Dr. Darin Aldrich - has seen the light.

The founder and president of Photon Golf, Aldrich is the developer of the Laser Surface Modification and Laser Nanogroove Technology used on Photon's drivers and putters, respectively.

The processes have helped result in a driver and putter that each has received excellent notices from Tour pros who've tried them, along with excellent reviews from GolfTestUSA and PGATour.com.

Add About Golf to that list. But more on that in a minute.

Aldrich founded Photon Golf, Inc., in November, 2000, after developing the laser technologies now applied to Photon clubs. Prior to founding Photon, Aldrich worked as a principal at Mountain Stream Design, LLC, providing design expertise to the sporting goods and advanced materials industries, while also working as a Research Assistant Professor in the Metallurgical and Materials Engineering Department at the Colorado School of Mines. It's from the Colorado School of Mines that Dr. Aldrich received his Ph.D. in Materials Science.

Photon's Titanium Pro Driver and YAG line of putters debuted at the 2003 PGA Merchandise Show.

The driver features a 360cc head, a three-piece titanium construction with a Ti-6Al-4V face. The laser application to the clubface helps eliminate surface defects that create a non-uniform elastic response in untreated clubfaces; this, in turn, helps channel vibrations away from the impact area. That means a more solid feel from the driver.

"The laser surface modification is done after the head is assembled," Aldrich said, and it results in a textured area whose obvious boundary around the edges of the clubface might fool some people into thinking there is a face insert (there isn't).

"There is no 'insert' on the face, that is merely the texture that is the result of the laser processing," Aldrich explained. "Since the laser is an extremely high temperature, a very small amount of titanium is evaporated off of the clubface, which results in the texture."

Improving the feel is the primary goal of the laser technology, Aldrich said, but eliminating surface defects is a very nice side effect.

"We have several pros that have tested our driver on a launch monitor vs. their clubs," Aldrich said, "and all reported as good as or better performance from an initial velocity, launch angle, and spin rate standpoint."

The YAG putter series currently includes two models, the YAG-1 and YAG-2, that fall into the heel-toe weighted category. Both are heel-shafted semi-mallet, heel-toe weighted mid-slant and center-shafted models are due soon.

With the putters, the laser application creates nanogrooves that grip the ball to eliminate skidding and produce a better roll.

"The process is functionally similar on the putter," Aldrich said, "but in this case we are trying to create a much larger degree of texture which helps grab the ball on impact and get it rolling sooner."

And a somewhat surprising development with the putters is that many who've tried them report a feel as soft as many inserts ... but not too soft.

"Interestingly enough, we have received a significant amount of feedback that the 'feel' of the putter is softer than a standard face, but not as so and mushy as a polymer insert putter," Aldrich said. "Our rationale is that there is a reduced contact area between the ball and the laser nanogrooves, thus the cover of the ball is compressed more (thus feels softer) than a standard putter face. We like to use the example of pushing a pencil eraser into your hand vs. pushing a pin into your hand - the smaller contact area of the pin puts a larger compression on your skin than the pencil eraser."

**Continued: About Golf Testing, Specs, Pricing and More**

## Innovative Approach Produces Better Feeling Driver, Putters

**Continued from Previous Page**

About Golf is the latest to give Photon's clubs a whirl and report good results. We passed around a 10.5-degree driver and a YAG-1 model putter to many golfers, ranging from terrible to professional, and the feedback was universally positive. Everyone felt the clubs were, at minimum, above average, and some felt much more strongly than that.

And, as Photon Golf intended, the biggest plus for our players was the feel. I can attest to that myself. I am a very strong iron player, but my driver play is the type of driver play that creates a LOT of vibration.

The Photon Titanium Pro driver produced a noticeably lower level of vibration - even when I was the one banging away with it.

Another interesting trend in our testing: While all players gave positive reviews to both clubs, the higher handicappers were slightly more complimentary about the driver than the putter, while the lower handicappers were slightly more complimentary about the putter than the driver.

I have a theory about that. Low handicappers are more attuned to feel because they are better players; but higher handicappers are more likely to see a noticeable and obvious difference in feel because they are less likely to hit the sweet spot. And when it comes to putters, higher handicappers are more in love with oversized mallets, whose backweighting is of bigger benefit to their games.

Everyone also loved the sound of the driver. As you would expect from a driver engineered to feel more solid than a typical thin-faced titanium club, the Photon driver sounds more solid.

### **The Specs**

- Driver: Currently comes in 9.0 and 10.5 degrees; 7.5 and 13.5 models due soon. Shaft length 45 inches, lie 58 degrees, clubhead size 360cc. Various shaft options (see pricing info below).
- Putters: True Temper steel shaft and Winn Medalist grip. Available in 33-, 34-, 35- and 36-inch lengths.

### **The Prices**

- Driver: With a Fujikura Vista Pro, Grafalloy ProLite 35, Harrison Striper Titanium or UST Harmon Tour Series shaft, MSRP is \$249.95. With a Penley ETA, Grafalloy Blue, Fujikura Vista Tour or Harrison Pro 2.5, MSRP is \$289.95.
- Putter: \$89.95 for all models.

### **A Few More Notes About Photon Golf**

- The company currently produces only drivers and putters, but a 3-wedge set is the next step and is close to release.
- Photon makes several golf accessories that have also drawn notice, particularly its Digital Scorecard that features a pager-style belt clip. There's also the Access Bag, a pouch that attaches to the golf bag for easy access to more balls, divot tool, etc.; and the Shoe Pod and Glove Wallet.

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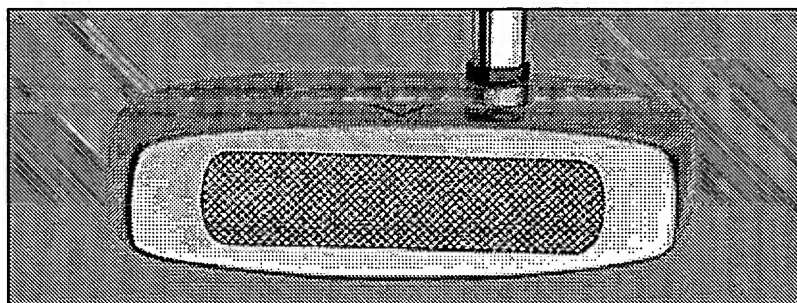
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## *Laser Surface Technology (LST)*

**Now Available on all Platinum Finished Cavity Back and Mallet Models!**

### *LST Explained*

Laser Nanogroove Technology uses a high-powered laser to create a well-defined surface texture on the face of a putter. A high magnification image from a scanning electron microscope (see image) shows the specific texture of v-shaped nanogrooves.



### *LST Benefits*

The high density of nanogrooves on the putter's surface help to grip the ball as it is hit, enhancing the control of topspin and immediate forward roll while reducing skidding even further. The laser nanogrooves also produce a unique feel due to the reduced contact area between the putter and the ball.

The surface texture actually helps channel high frequency vibrations away from the impact zone. High frequency vibrations give the hollow, thin feel and sound that is characteristic to some putters on the market.

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## Press Releases

### **ASERTA SPORTS ACQUIRES PHOTON GOLF; CREATES WORLD CLASS R&D TEAM TO DEVELOP NEW TECHNOLOGY**

San Jose, CA - Michael Bonneau, Founder of Aserta Sports, Inc., makers of the ECLIPSE putter, announced today that he has acquired Photon Golf of Westminster, CO. Photon Golf was founded in 2000 by Darin Aldrich. Aldrich will assume a consulting role with Aserta Sports, Inc.

"Photon Golf's patented laser surface technology will greatly enhance Aserta's Inverted Mass Technology (IVM)," said Bonneau. "Now the combination of Aserta's high center of gravity combined with Photon's laser surface technology will generate high topspin rpm's thereby shortening skid distances and insuring the ball tracks more efficiently on line," continued Bonneau. "Unlike traditional putters, our Inverted Mass Technology (IVM) raises the center of gravity and automatically imparts topspin instead of backspin. Photon's laser surfacing will greatly enhance our technology," said Bonneau.

"While the golf club industry has concentrated on weight distribution, our focus has been to properly engineer the surface of the club, be it a wedge, driver or putter. Weight distribution is important but everyone has ignored the concept that the surface of the club plays a critical role," commented Aldrich. "The texture of the club face has a dramatic impact on performance. The combination of Inverted Mass Technology (IVM) and laser surfacing technology will change the industry," continued Aldrich. "Aserta Sports has the infrastructure in place and is making the necessary investment to take this technology to the next level and drive the visibility of our products to the consumer," said Aldrich. "There is a great synergy between our technologies and I am very excited about joining forces with Aserta Sports," continued Aldrich.

"This acquisition demonstrates our ability to recognize new technologies and incorporate them into our aggressive business strategy to develop and manufacture the finest putting instrument in the world," commented Bonneau. Aldrich joins Bonneau and Rich Parente. Parente is the owner of Golf Laboratories and a founder of Callaway Golf and Goldwin Golf. Aldrich earned a B.S. in Metallurgical and Materials Engineering from Purdue University in 1993 and a PhD in Materials Science from the Colorado School of Mines in 1997. "When you combine Darin Aldrich's experience in surface engineering and metallurgical materials, Rich Parente's knowledge in club design and development with the technology we have developed at Aserta Sports, we have created a very strong team," stated Bonneau. "Our team is looking toward the future. We have already begun work on several new patent applications and we hope to introduce new Aserta products at the 2005 PGA Merchandise Show - if not sooner," said Bonneau.

Located in San Jose, CA, Aserta Sports, Inc is the inventor and manufacturer of Inverted Mass Technology, the patented process which raises the putter's center of gravity into the perfect position to automatically impart topspin instead of backspin, hopping or skidding caused by bottom heavy putters. With Aserta, the golf ball starts rolling accurately toward its target the instant it leaves the clubface. Located in San Jose, CA, Aserta Sports, Inc is the inventor and manufacturer of Inverted Mass Technology, the patented process which raises the putter's center of gravity into the perfect position to automatically impart topspin instead of backspin, hopping or skidding caused by bottom heavy putters. With Aserta, the golf ball starts rolling accurately toward its target the instant it leaves the clubface.

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For more information visit [www.asertasports.com](http://www.asertasports.com) or call 408-251-7888

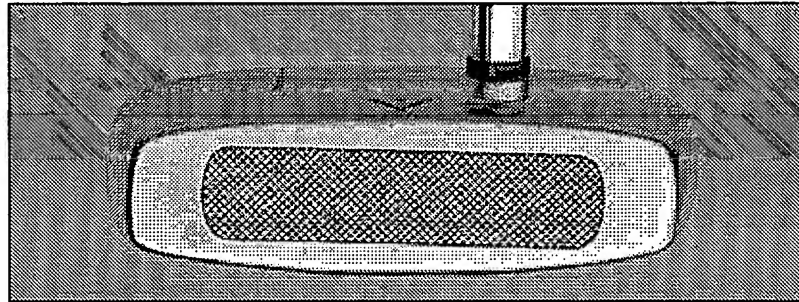
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## IVM Technology

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### Turning Putting Upside Down

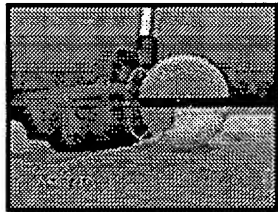


The putter has a unique mission in golf, it is the only club in the bag intended to roll the ball. Every other club is designed to loft the ball with backspin. Yet conventional putters have traditionally developed the same lower center of gravity as woods and irons and produce the same result, they loft the ball with backspin. To get a ball rolling truly to its intended target, a putter needs to impart "topspin" at impact. This is where the Aserta Putter and its Patented IVM Technology turns putting upside down.

#### Introducing IVM™ - Inverted Mass Technology from Aserta

Aserta's patented IVM technology, actually raises the center of gravity of the putter head. This breakthrough allows the ball to be struck at its equator with the majority of the putter head's mass, producing an immediate topspin and a true and accurate forward roll.

### Immediate True Roll



A traditional putter with its low center of gravity adds backspin to every putt causing the ball to hop and skid before it starts rolling. If a ball is hopping or skidding, it's going to go off line, not where you aim!

The IVM inverted mass putter raises the center of gravity into the perfect position and automatically imparts topspin instead of backspin so the ball starts rolling accurately toward its target the instant it leaves the clubface. The truest possible roll!

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Inventor & Founder  
Aserta Sports, Inc.

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**Richard Parente**  
Legendary Clubmaker  
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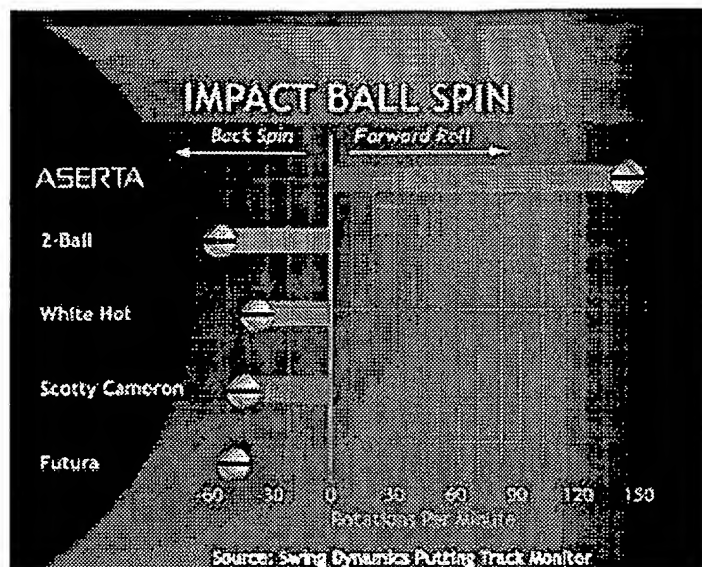
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**John Pierandozzi**  
Club Designer

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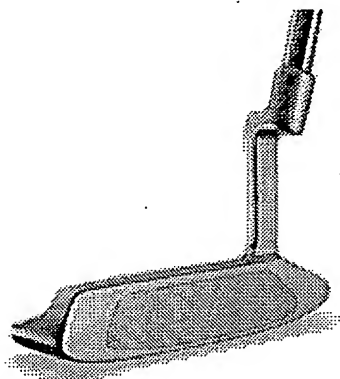
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**Photon Golf Yag Putter**

**Photon Golf Yag Putter**

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Photon Golf Yag Putters Photon YAG putters were inspired by tour-proven designs, coupled with cutting-edge laser technology. the putters are precision cast from a 304 stainless steel for optimum feel. Technology Laser Nanogroove Technology uses a high powered laser to create a well-defined surfa ...



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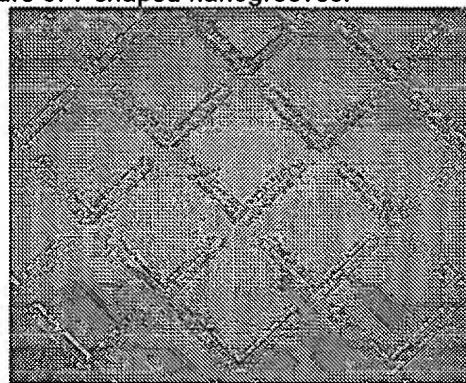
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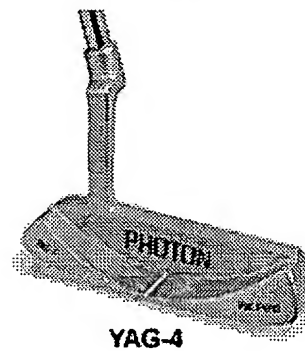
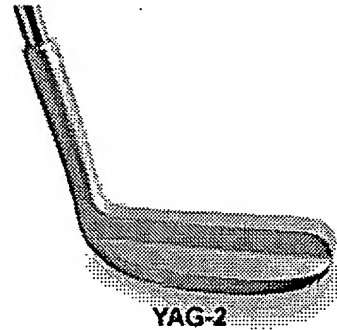
### ***Technology***

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### ***Benefits***

The high density of nanogrooves on the putter's surface help to grip the ball as it is hit, producing an immediate forward roll while significantly reducing the skidding that is common with other putters. The laser nanogrooves also produce a very unique feel due to the reduced contact area between the putter and the ball.



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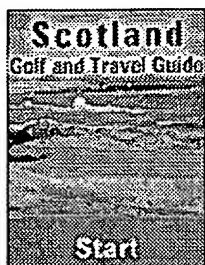
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#### STICKS & STONES

## Equipment wars starting to cool down just a bit in 2004

By *Kiel Christianson*, Equipment Editor

BOSTON (Jan. 4, 2004) — As the great technology debate rages all around us, like a civil war turning low-handicap brother against high-handicap brother, the 2004 season is actually shaping up to be a year of tweaking and tinkering, rather than one of revolutionary advances. Massive titanium drivers are now the norm, as are soft-feeling, long-flying balls with spin rates and core compositions tailored to all games and tastes. If any trend for 2004 can be identified, it is likely the new eye toward greater playability in irons by companies from Nike to Nickent.



Nickent Golf's Genex 3DX hybrids

Although the 2004 PGA Golf Merchandise Show in Orlando is still ahead, we've identified a few standouts in what should be a very competitive 2004 equipment market.

### Drivers

The big-name (read big-price tag) companies are touting their latest and greatest, which is hardly news. If the day ever comes when Callaway kicks off a new season by simply saying, "Nothing new here. We'll stick with the old models," say your prayers because the apocalypse is nigh.

We look to be safe this season, though. Now that the whole ERC controversy has been settled between the USGA and R&A, Callaway has one-upped itself with the new **ERC Fusion** driver (MSRP \$500-\$600). This new monster was created when Callaway's mad scientists, er, engineers took the carbon fiber clubhead from last season's C4, merged it with a VFT titanium face, ordered Igor to flip a switch, and screamed "Let there be life!" If you take this creation to certain small burghs in Scotland, the villagers might just chase you from town with torches and pitchforks. (callawaygolf.com)



Nike's new **Ignite** driver (MSRP \$469) apparently has lured Tiger back to the swoosh side. It's made from a proprietary new titanium alloy called **NexTi**, and with its post-industrial aesthetic and 460cc head, the Ignite looks like it should be in the Terminator's golf bag. Tiger, Rory

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Smaller companies are also bringing out new drivers, and these carry solid pedigrees at somewhat more affordable prices.

**Alpha Golf**, a division of Kent Sports, introduced the C830.2 driver to the competitive long-drive world in 2003, and is bringing it to the public in 2004. The C830.2 (MSRP \$325) was used by the winners of the men's and women's divisions of the 2003 Pinnacle/LDA Pro Long Drive Championship, as well as the junior and senior division winners of the ReMax Long Drive championships. The 460cc head has the highest COR allowed by the USGA. Any stick that'll allow a senior to crush a 381-yard drive is worth a look in our book. ([www.alphareactiongolf.com](#))

**KZ Golf** (a.k.a. KZG), the little company that could, is introducing the **Cobalt** driver (MSRP \$289, fairway woods \$279). KZG calls cobalt the "ideal" metal for use in drivers, pointing out that it is so strong that it's used in the construction of jet engines. If the quality of KZG's other other drivers is any indication, the Cobalt should be a beauty. ([kzgold.com](#))



KZG's Cobalt driver: jet engine on a stick.

## Irons

Nike has scored a design victory with the **Slingshot Irons** (MSRP \$799 steel; \$899 graphite). Ten years in the making, the Slingback technology features a convex bar of steel arching across the back of the club from heel to toe. According to Nike, the progressive positioning of this bar from long to short irons optimizes launch angle and ball spin. And they look really cool, too. ([nikegolf.com](#))



Ben Hogan Golf's first hybrid iron set.

Even **Ben Hogan Golf**, famous for high-performance forged irons, is getting into the hybrid iron game with the **Edge CFT Hybrid "h" iron set** (MSRP \$120 each steel; \$150 each graphite). This classy looking set replaces the low irons (3-4 or 5) with black and silver ironwoods, an arrangement that looks both classic and at the same time innovative. ([benhogan.com](#))

**Tour Edge** has tuned up their solid Wood-Iron and is introducing an 8-club set of Iron-Woods called the **Bazooka JMAX**. The first entire Iron-Wood set, the JMAX is humbly called "stunning, thought-provoking, and overwhelmingly easy to hit the most significant advance in irons since the introduction of the cavity-back" in the company's press release. And if you decide you don't need to replace your 9-iron with a fairway wood-like implement, Tour Edge does offer the new JMAX individually (MSRP \$99 graphite, \$89 steel) as well. ([touredgegolf.com](#))

Taking playability to a whole new level, **Nickent Golf** has designed the

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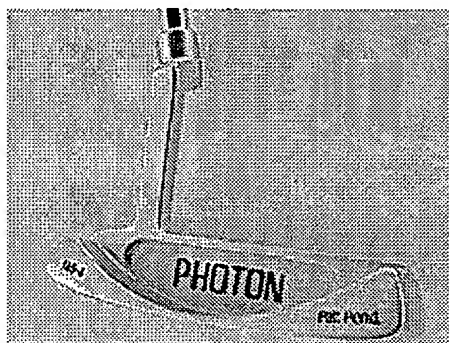
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ultimate in forgiving irons in the **Genex 3DX Hybrid** irons (MSRP \$699 graphite, \$599 steel). According to Nickent, it is the first company ever to offer a full set of hybrid irons, from #2 ironwood through to the wedge series. The Genex 3DX is not a combo set, nor an extended ironwood set – it is a complete all-hybrid iron set, available in two set configurations: irons PW-5, ironwoods 4-2, or irons PW-7, ironwoods 6-2. Although the irons and the ironwoods look different, the weighting concept is the same-fitting together seamlessly like the wound and wire strings on a steel-string guitar. (nickentgolf.com)

## Putters

Last season saw traditionalist Phil Mickelson abandon his flanged blade for a **Scotty Cameron Futura** branding iron. What followed was a gaggle of goofy-looking flatsticks, some of which lived up to their flashy designs, some of which did not. We've heard rumors that 2004 will see Lefty drop the Futura. Maybe the pendulum is swinging back to a more classic look for putters. In any case, the putter market seems more subdued this year than last.

The extended line of **YAG** putters by **Photon Golf** includes the YAG-3 – a face balanced semi-mallet with a double-bend shaft; YAG-4 – a heel-toe weighted mid-slant; YAG-5 – a face-balanced center-shafted model; and YAG-1L – a left-handed version of the heel/toe weighted tour offset model (all models MSRP \$90). Photon uses a proprietary laser-cut Nanogroove technology to create micro-scale surface features on the face of the YAG putters. This technology makes the face feel something like sharkskin, and the roughness creates almost instant forward roll if the ball is struck slightly on the upstroke. (photongolf.com)



Photon Golf's YAG series putters

## Balls



Ben Hogan Golf's Hawk ball

**Nike's Mojo** ball (MSRP \$28/dozen) is a marketing masterpiece, replete with New Age karmic references, VW tour buses, and retro-psychedelic packaging. And who knows, maybe the Mojo will provide your game with harmony and peace?

**Ben Hogan Golf** introduces the new **Hawk** ball (MSRP \$30/dozen), which features an inner cover that serves to perimeter-weight the core, and an ultra-thin, ultra-white

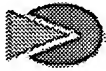
outer cover that gives you a better chance at grabbing and holding greens, as well as finding those occasional errant shots.

## Bags

The technological advances in golf have not been limited to clubs and balls. Even the lowly golf bag has evolved into a high-performance machine designed







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to protect your considerable equipment investment. No bag manufacturer has worked harder to bring this evolution about than Ogio. At the top of the new 2004 line is the revolutionary Stinger cart bag (MSRP \$249). Its patent-pending Rail system allows you to secure your bag at a 45° angle from the back of the cart for easier stand-bag-like access. Additional innovations include a zipperless ball pocket and rain hood. ([www.ogio.com](http://www.ogio.com))

If the USGA and R&A impose equipment restrictions on golf bags, the revolutionary-minded Ogio will likely be the only company affected. And the equipment wars will rage on a whole new level.

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## Newcomers look to carve niche in equipment market

July 9, 2003

By Chuck Stogel

GolfWeb Equipment Correspondent

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Trinity, Blade and Photon are three relatively new names in golf equipment.

Each is seeking to establish a niche foothold in a vastly competitive marketplace by promoting unique playing characteristics and technological merits.

For Photon Golf, which is based in Westminster, Colo., "laser" is the key word. The company cites the benefits of its laser surface modification for its drivers and laser nanogroove technology for its putters.

For Blade Golf, based in Montgomery, Ala., it began four years ago by building a faithful following for its forged irons. This month, the company began shipping its X380 titanium drivers in a bid to expand its scope.

For Trinity Golf, headquartered in Tustin, Calif., a curiously familiar look to its wedges blends with quality manufacturing and on-course performance.

Here's a closer look at all three.

### Feature content

### PHOTON

#### Information:

- [Get more info on Trinity, Blade and Photon](#)

A group of demo testers assembled by GolfWeb praised both the Titanium Pro Driver and the YAG-1 putter from

Photon.

In making its driver, which comes with a 360cc head in lofts of 9.0 and 10.5 degrees, Photon employs a laser surface modification process which, according to the company, helps eliminate surface defects and creates a consistent response across the face.

Testers praised the Photon driver for its solid looks, solid feel at impact and for overall results in trajectory and distance achieved.

Due to ship next month, the Photon driver comes with a multitude of shaft options. Suggested retail prices, depending on shaft, range from \$249 to \$379.

Our test group was even more praiseworthy in reviewing the Photon YAG-1 putter, which looks a lot like the Ping Anser or Scotty Cameron Newport by Titleist (which itself is a derivative of the Ping Anser).

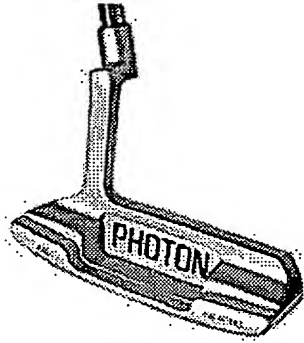
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**The YAG putter features laser nanogroove technology.**

"It just feels great, and works very well," said one tester.

Based on heel-toe weighted designs with heel-shafted blades, the YAG putter faces are manufactured via laser nanogroove technology, which is designed to produce a crisp, non-skid roll.

The YAG putter series will expand in August to offer a semi-mallet and a heel-toe weighted mid-slant.

All the Photon putters bear a suggested retail price of \$89.

## TRINITY

Stand back about 10 to 15 feet from any Trinity wedge, without knowing the manufacturer, and try to guess who makes these clubs. In an actual test among a demo group of golfers, the responses were virtually unanimous: Ping.

Designed by Les Miller, whose background includes creditable stints at Cleveland and Never Compromise, the new TG 02 Spin Action wedges are unabashedly modeled after the Ping Eye2 series. Most importantly, though, they not only look the part, they performed very well in group testing.

Trinity makes its wedges with a choice of two materials: carbon steel with an elegant "cobalt" finish that will wear over time to enhance feel and spin control; beryllium copper, which has a unique feel itself and is designed for consistent play.

Both models come in a series of three wedges: gap, 52 degrees; sand, 56 degrees; and lob, 60 degrees.

The two materials have distinct trajectories and distances, so choosing between them becomes a matter of testing and personal preference.

"It's in the grind that you'll find the key to the TG 02 wedges; the sole's width, camber, bounce and, most importantly, the way these features are blended together," said Miller.

Featuring large heads, square grooves and steel shafts, list price is \$89 per wedge in carbon steel and \$99 in beryllium copper.

## BLADE

Still a young company, Blade has gained some renown for its Tour Feel putter line as well as its TF-1 and TC-2 irons.

This month, Blade added an X380 titanium driver to its lineup.

"Just like our forged irons, the X380 has to exceed, not just meet, the competition," said Richard Madison, Blade Golf president/CEO.

Made from a titanium alloy, the X380 boasts a center of gravity that will promote greater distance for the average golfer while allowing more skilled players the ability to "work" the ball. The club also features a

Variable Hosel Tuning technology whereby a three-inch hosel bore allows for custom tuning the shaft to individual playing characteristics.

Available in lofts of 8.5, 9.5, 10.5 and 11.5 degrees, the suggest retail prices for the X380 range \$299 to \$399 depending on the shaft selected.

**Editor's note:** *Chuck Stogel writes about equipment. Look for his columns each week on GolfWeb and PGATOUR.COM.*

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## Chart: Trinity, Blade and Photon specs

July 9, 2003

By Chuck Stogel

GolfWeb Equipment Correspondent

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### Specs on Trinity, Blade and Photon

**Blade Golf X380 driver** SP-700 titanium alloy; 380cc square profile; variable hosel tuning; 55mm deep face; .335 tip hosel; face lofts of 8.5, 9.5, 10..5, 11.5 degrees; stock shaft selection includes Blade 6528 Tour (65 grams, 2.8 torque), Grafalloy Blue & Red 3.5, Graphite Design YS series, Fujikura Vista Tour, Fujikura Speeder series, Fujikura International series, Aldila Green prototype series; list prices range \$299 to \$399 depending on shaft selection.

**Trinity Golf TG 02 Spin Action wedges** lofts of 52 (gap), 56 (sand) and 60 (lob) degrees; choice of carbon steel or beryllium copper clubhead materials; oversize heads; square grooves; True Temper steel shafts; unique grind sole design; list price is \$89 per wedge in carbon steel, \$99 in beryllium copper.

**Photon Golf putters** YAG-1 and YAG-2 models are cast from 304 stainless steel; heel-toe weighted design, heel-shafted blades; faces made with laser nanogroove technology; right-handed only with True Temper steel shafts of 33, 34, 35 and 36 inches; list price \$89 each.

**Photon Golf driver** 360 cc titanium clubhead; faces, made with laser surface modification, in lofts of 9.0 and 10.5 degrees; 45-inch Penley shafts in R, S and X flexes; list price \$249 with Stealth 70 shaft, \$289 with ETA shaft

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## Photon Golf - See the Light

From Brent Kelley, Your Guide to Golf.  
Jul 9 2004

### Innovative Approach Produces Better Feeling Driver, Putters

Photon Golf is a young company using an innovative laser technology to produce better-feeling drivers and putters.

Darin Aldrich - make that Dr. Darin Aldrich - has seen the light.

The founder and president of Photon Golf, Aldrich is the developer of the Laser Surface Modification and Laser Nanogroove Technology used on Photon's drivers and putters, respectively.

The processes have helped result in a driver and putter that each has received excellent notices from Tour pros who've tried them, along with excellent reviews from GolfTestUSA and PGATour.com.

Add About Golf to that list. But more on that in a minute.

Aldrich founded Photon Golf, Inc., in November, 2000, after developing the laser technologies now applied to Photon clubs. Prior to founding Photon, Aldrich worked as a principal at Mountain Stream Design, LLC, providing design expertise to the sporting goods and advanced materials industries, while also working as a Research Assistant Professor in the Metallurgical and Materials Engineering Department at the Colorado School of Mines. It's from the Colorado School of Mines that Dr. Aldrich received his Ph.D. in Materials Science.

Photon's Titanium Pro Driver and YAG line of putters debuted at the 2003 PGA Merchandise Show.

The driver features a 360cc head, a three-piece titanium construction with a Ti-6Al-4V face. The laser application to the clubface helps eliminate surface defects that create a non-uniform elastic response in untreated clubfaces; this, in turn, helps channel vibrations away from the impact area. That means a more solid feel from the driver.

"The laser surface modification is done after the head is assembled," Aldrich said, and it results in a textured area whose obvious boundary around the edges of the clubface might fool some people into thinking there is a face insert (there isn't).

"There is no 'insert' on the face, that is merely the texture that is the result of the laser processing," Aldrich explained. "Since the laser is an extremely high temperature, a very small amount of titanium is evaporated off of the clubface, which results in the texture."

Improving the feel is the primary goal of the laser technology, Aldrich said, but eliminating surface defects is a very nice side effect.

"We have several pros that have tested our driver on a launch monitor vs. their clubs," Aldrich said, "and all reported as good as or better performance from an initial velocity, launch angle, and spin rate standpoint."

The YAG putter series currently includes two models, the YAG-1 and YAG-2, that fall into the heel-toe weighted category. Both are heel-shafted semi-mallet, heel-toe weighted mid-slant and center-shafted models are due soon.

With the putters, the laser application creates nanogrooves that grip the ball to eliminate skidding and produce a better roll.

"The process is functionally similar on the putter," Aldrich said, "but in this case we are trying to create a much larger degree of texture which helps grab the ball on impact and get it rolling sooner."

And a somewhat surprising development with the putters is that many who've tried them report a feel as soft as many inserts ... but not too soft.

"Interestingly enough, we have received a significant amount of feedback that the 'feel' of the putter is softer than a standard face, but not as so and mushy as a polymer insert putter," Aldrich said. "Our rationale is that there is a reduced contact area between the ball and the laser nanogrooves, thus the cover of the ball is compressed more (thus feels softer) than a standard putter face. We like to use the example of pushing a pencil eraser into your hand vs. pushing a pin into your hand - the smaller contact area of the pin puts a larger compression on your skin than the pencil eraser."

[Continued: About Golf Testing, Specs, Pricing and More](#)

## Innovative Approach Produces Better Feeling Driver, Putters

[Continued from Previous Page](#)

About Golf is the latest to give Photon's clubs a whirl and report good results. We passed around a 10.5-degree driver and a YAG-1 model putter to many golfers, ranging from terrible to professional, and the feedback was universally positive. Everyone felt the clubs were, at minimum, above average, and some felt much more strongly than that.

And, as Photon Golf intended, the biggest plus for our players was the feel. I can attest to that myself. I am a very strong iron player, but my driver play is the type of driver play that creates a LOT of vibration.

The Photon Titanium Pro driver produced a noticeably lower level of vibration - even when I was the one banging away with it.

Another interesting trend in our testing: While all players gave positive reviews to both clubs, the higher handicappers were slightly more complimentary about the driver than the putter, while the lower handicappers were slightly more complimentary about the putter than the driver.

I have a theory about that. Low handicappers are more attuned to feel because they are better players; but higher handicappers are more likely to see a noticeable and obvious difference in feel because they are less likely to hit the sweet spot. And when it comes to putters, higher handicappers are more in love with oversized mallets, whose backweighting is of bigger benefit to their games.

Everyone also loved the sound of the driver. As you would expect from a driver engineered to feel more solid than a typical thin-faced titanium club, the Photon driver sounds more solid.

### The Specs

- Driver: Currently comes in 9.0 and 10.5 degrees; 7.5 and 13.5 models due soon. Shaft length 45 inches, lie 58 degrees, clubhead size 360cc. Various shaft options (see pricing info below).
- Putters: True Temper steel shaft and Winn Medalist grip. Available in 33-, 34-, 35- and 36-inch lengths.

### The Prices

- Driver: With a Fujikura Vista Pro, Grafalloy ProLite 35, Harrison Striper Titanium or UST Harmon Tour Series shaft, MSRP is \$249.95. With a Penley ETA, Grafalloy Blue, Fujikura Vista Tour or Harrison Pro 2.5, MSRP is \$289.95.
- Putter: \$89.95 for all models.

### A Few More Notes About Photon Golf

- The company currently produces only drivers and putters, but a 3-wedge set is the next step and is close to release.
- Photon makes several golf accessories that have also drawn notice, particularly its Digital Scorecard that features a pager-style belt clip. There's also the Access Bag, a pouch that attaches to the golf bag for easy access to more balls, divot tool, etc.; and the Shoe Pod and Glove Wallet.

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